

I claim:

1. A golf club comprising:

an club configuration selected from the group consisting of 1, 2, 3, 4, 5, 6, and 7 wherein club configuration comprises:

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to said shaft portion;

a club face; and

a reduced volume groove configuration positioned on said club face, wherein said groove configuration has lower volume and imparts less backspin on the ball than a conventional square groove configuration.

2. The golf club of claim 1 wherein said reduced volume groove is a V groove configuration having a centerline spacing of about 0.05 to about 0.300 inches between at least one additional V groove configuration.

3. The golf club of claim 2 wherein said centerline spacing is about 0.105 ± 0.05 inches.

4. The golf club of claim 2 wherein said V groove configuration has a first surface angle that is about 20 to about 50 degrees from the center of the groove.
5. The golf club of claim 4 wherein said V groove configuration has a second surface angle that is about 20 to about 50 degrees from the center of the groove.
6. The golf club of claim 5 wherein said first surface angle and said second surface angle is about 30 to about 40 degrees from the center of the groove and are set to have angles equal to each other.
7. The golf club of claim 2 wherein said V groove configuration has a second surface angle that is about 20 to about 50 degrees from the center of the groove.
8. The golf club of claim 2 wherein said V groove configuration has a groove depth of about 0.005 to about 0.04 inches.
9. The golf club of claim 8 wherein said V groove configuration has a groove depth of about 0.01 to about 0.03 inches.

10. The golf club of claim 2 wherein said V groove configuration has a groove width of about 0.01 to about 0.05 inches.
11. The golf club of claim 9 wherein said groove depth is about 0.02 to about 0.04 inches.
12. The golf club of claim 2 wherein said V groove configuration has an edge spacing of about 0.05 to about 0.300 inches between at least one additional V groove configuration.
13. The golf club of claim 12 wherein said edge spacing is about 0.075 to about 0.2 inches between at least one additional V groove configuration.
14. The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of center grooves having a groove spacing of about 5 to about 50% greater than grooves placed on an outer portion of said club face.
15. The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of center grooves having a concave groove with a center depth of about 5 to about 50% less than grooves placed on an outer portion of said club face.

16. The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of center grooves having a groove depth of about 5 to about 50% less than grooves placed on an outer portion of said club face.

17. The golf ball of claim 1 wherein said reduced volume groove configuration is a plurality of convex grooves having a center groove width of about 5 to about 50% less than grooves placed on an outer portion of said club face.

18. The golf ball of claim 1 wherein said reduced volume groove configuration is a V groove selected from the group consisting of a plurality of center grooves having a groove depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of convex grooves having a center groove width of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a concave groove with a center depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a groove spacing of about 5 to about 50% greater than grooves placed on an outer portion of said club face, and a combination thereof.

19. A golf club comprising:

an club configuration selected from the group consisting of 8, 9, pitching wedge, gap wedge and sand wedge wherein club configuration comprises:

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to said shaft portion;

a club face; and

an increased volume groove configuration, wherein said groove configuration imparts greater spin on the ball than a conventional square groove and reduces flyer conditions through prevention of hydroplaning by channeling moisture from between the club face and the ball.

20. The golf club of claim 19 wherein said increased volume grove configuration is a U groove having a groove bottom that is a substantially planar surface.

21. The golf club of claim 20 wherein said substantially planar surface is parallel to the club face.

22. The golf club of claim 19 wherein said increased volume groove configuration is a U groove configuration that has a

centerline spacing of about 0.05 to about 0.300 inches between at least one additional U groove configuration.

23. The golf club of claim 22 wherein said centerline spacing is about 0.105 ± 0.05 inches.

24. The golf club of claim 22 wherein said U groove configuration has a first surface angle that is about 5 to about 25 degrees relative to an imaginary surface 90 degree to the club surface.

25. The golf club of claim 24 wherein said U groove configuration has a second surface angle that is about 5 to about 25 degrees relative to an imaginary surface 90 degree to the club surface.

26. The golf club of claim 22 wherein said first surface angle and said second surface angle are about 18 to about 22 degrees relative to an imaginary surface 90 degrees to the club surface, and are set to have angles equal to each other.

27. The golf club of claim 22 wherein said U groove configuration has a second surface angle that is about 5 to

about 25 degrees relative to an imaginary surface 90 degree to the club surface.

28. The golf club of claim 22 wherein said U groove configuration has a groove depth of about 0.005 to about 0.04 inches.

29. The golf club of claim 22 wherein said groove depth is about 0.01 to about 0.03 inches.

30. The golf club of claim 22 wherein said U groove configuration has a groove width of about 0.01 to about 0.05 inches.

31. The golf club of claim 23 wherein said groove depth is about 0.02 to about 0.04 inches.

32. The golf club of claim 22 wherein said U groove configuration has an edge spacing of about 0.05 to about 0.300 inches between at least one additional U groove configuration.

33. The golf club of claim 26 wherein said edge spacing is about 0.075 to about 0.2 inches between at least one additional U groove configuration.

34. The golf ball of claim 19 wherein said increased volume groove configuration is a plurality of center grooves having a groove spacing of about 5 to about 50% less than grooves placed on an outer portion of said club face.

35. The golf ball of claim 19 wherein said increased volume groove configuration is a plurality of center grooves having a concave groove with a center depth of about 5 to about 50% more than grooves placed on an outer portion of said club face.

36. The golf ball of claim 19 wherein said increased volume groove configuration is a plurality of center grooves having a groove depth of about 5 to about 50% more than grooves placed on an outer portion of said club face.

37. The golf ball of claim 1 wherein said increased volume groove configuration is a plurality of convex grooves having a center groove width of about 5 to about 50% more than grooves placed on an outer portion of said club face.

38. A golf club set comprising:

a first club configuration wherein at least one club selected from the group consisting of clubs 1, 2, 3, 4, 5, 6, and 7 wherein selected first club configuration comprises:

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to said shaft portion;

a club face;

a reduced volume groove configuration on said club face, wherein said groove configuration imparts less backspin on the ball than a conventional square groove; and,

a second club configuration selected from the group consisting of 8, 9, pitching wedge, gap wedge and sand wedge wherein selected second club configuration comprises:

a head portion having a toe area and a heel area;

a shaft portion;

a hosel portion connecting said head portion to said shaft portion;

a club face; and

an increased volume groove configuration wherein said groove configuration imparts greater spin on the ball than a conventional square groove and reduces flyer conditions through prevention of hydroplaning by channeling moisture from between the club face and the ball.

39. The golf club set of claim 28 wherein club 1, 2, 3, 4, 5, 6, and 7 all contain said decreased volume grooves.

40. The golf ball of claim 39 wherein said decreased volume grooves are selected from the group consisting of a plurality of V grooves, a plurality of center grooves having a groove depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of concave grooves having a center groove width of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a concave groove depth with a center depth of about 5 to about 50% less than grooves placed on an outer portion of said club face, a plurality of center grooves having a groove spacing of about 5 to about 50% greater than grooves placed on an outer portion of said club face, and a combination thereof.

41. The golf ball of claim 39 wherein said increased volume grooves are selected from the group consisting of a plurality of U grooves, a plurality of center grooves having a groove depth of about 5 to about 50% greater than grooves placed on an outer portion of said club face, a plurality of convex grooves having a center groove width of about 5 to about 50% greater than grooves placed on an outer portion of said club face, a plurality of center grooves having a concave groove depth with a center depth of about 5 to about 50% more than grooves placed on an outer portion of said club face, a plurality of center grooves having a groove spacing of about 5 to about 50% less than grooves placed on an outer portion of said club face, and a combination of configurations thereof.

42. The golf club set of claim 38 wherein clubs 8, 9, pitching wedge, gap wedge and sand wedge all contain said increased volume grooves.

43. The golf club set of claim 42 wherein said increased volume grooves are U grooves.